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NOTICE OF ALLOWANCE AND FEE(S) DUE

60909 7590 06/02/2010

CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE, CA 95134-1709

EXAMINER

PROCTOR, JASON SCOTT

ART UNIT

PAPER NUMBER

2123

DATE MAILED: 06/02/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/001,478

11/01/2001

Craig Nemecek

CD01213M

6435

TITLE OF INVENTION: IN-CIRCUIT EMULATOR AND POD SYNCHRONIZED BOOT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	09/02/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

60909 7590 06/02/2010

CYPRESS SEMICONDUCTOR CORPORATION
198 CHAMPION COURT
SAN JOSE, CA 95134-1709

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/001,478 11/01/2001 Craig Nemecek CD01213M 6435

TITLE OF INVENTION: IN-CIRCUIT EMULATOR AND POD SYNCHRONIZED BOOT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$0 \$0 \$1510 09/02/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
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PROCTOR, JASON SCOTT 2123 703-025000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/001,478	11/01/2001	Craig Nemecek	CD01213M	6435
60909	7590	06/02/2010	EXAMINER	
CYPRESS SEMICONDUCTOR CORPORATION			PROCTOR, JASON SCOTT	
198 CHAMPION COURT			ART UNIT	PAPER NUMBER
SAN JOSE, CA 95134-1709			2123	
DATE MAILED: 06/02/2010				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 857 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 857 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	10/001,478	NEMECEK ET AL.	
	Examiner	Art Unit	
	JASON PROCTOR	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 3/23/2010.
2. ☒ The allowed claim(s) is/are 1,2,4-10,12 and 14-23.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
|---|--|

/Jason Proctor/
Primary Examiner, Art Unit 2123

Art Unit: 2123

NOTICE OF ALLOWANCE

Claims 1, 2, 4-10, 12, and 14-23 were rejected in the Office Action entered on 4 August 2009.

Applicants' response submitted on 4 November 2009 has amended claims 1, 2, 4, 7, 8, 10, and 23. Claims 1, 2, 4-10, 12, and 14-23 are pending in this application.

A Requirement for Information under 37 CFR 1.105 was entered on 23 February 2010.

Applicants provided a complete response to the Requirement for Information on 23 March 2010 as described below.

Claims 1, 2, 4-10, 12, and 14-23 are pending in this application.

Claims 1, 2, 4-10, 12, and 14-23 are allowed.

Applicants' Reply to the Requirement for Information

1. A Requirement for Information under 37 CFR 1.105 was entered in this application on 23 February 2010 ("the Requirement"). That Requirement asked Applicants to "Identify 10-20 patent documents and 10-20 non-patent references considered to be most relevant by Applicants and listed on the IDS submitted 20 July 2009. In their response, Applicants did not identify any such references cited on the 20 July 2009 IDS, and further remarked that:

[T]o require the Applicant to identify 10-20 of the most relevant references is a substantial burden on the Applicant, and more importantly requires the Applicant to formulate opinions on art cited in related cases. It is respectfully submitted that this request is outside the scope of 37 CFR 1.105 and MPEP 704.11, which clearly states ONLY facts and factual information may be sought and NOT opinions formulated by the Applicant. (Applicants' remarks, 23 March 2010, page 3)

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The Examiner acknowledges that identifying the 10-20 references as specified by the Requirement would likely reflect Applicants' opinions rather than facts or factual information. In light of MPEP 704.11, which instructs that 37 CFR 1.105 should not be used to obtain "opinions that may be held or would be required to be formulated by applicant," the Examiner is persuaded that the Requirement is outside the scope of 37 CFR 1.105.

Therefore Applicants' remarks submitted on 23 March 2010 are considered a complete reply to the Requirement, which has been satisfied.

Information Disclosure Statement

2. Regarding the 20 July 2009 Information Disclosure Statement ("the IDS"), the Examiner respectfully submits the following observations:

a) The IDS document contains 159 pages of citations of patent documents, foreign patent documents, and non-patent literature.

b) The IDS includes citation of approximately 799 US Patent Documents, 54 US Pre-grant Publications, 16 Foreign patent documents, and 622 Non-Patent Literature References. The Non-Patent Literature alone constitutes approximately 9972 pages of disclosure.

c) In the 4 August 2009 Non-Final Office Action, the Examiner requested that Applicants "highlight those documents which are known to be of the most significance". Applicants' response in the 4 November 2009 submission states, "Applicant is not presently aware that any of the cited documents is more significant than any of the other cited documents."

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d) In the Requirement, "the Examiner has considered the first 20 references and is unable to ascertain the relevance to the current claimed invention. [...] Due to the high volume of prior art submissions and the lack of readily apparent relevance, the applicant is required to specifically point the examiner's attention to the 10-20 most relevant patent and non-patent documents." In Applicants' 23 March 2010 response to the Requirement, Applicants have not identified any such references.

3. Therefore, the Examiner respectfully submits that:

a) The IDS identifies an unusually large number of references, representing an unusually large volume of technical disclosure. The Examiner is unable to reasonably determine the full scope of the teachings found in these references.

b) It is unclear how the references cited on the IDS are "material to the patentability" to the pending claims in this application. It is unclear how the references cited on the IDS are relevant to the disclosed invention in this application.

c) The Examiner has requested assistance from Applicants in determining how the references cited on the IDS are relevant to this application, however Applicants have not provided assistance.

4. In conclusion, the Examiner has made a reasonable effort to consider the references cited on the IDS, but is unable to determine the full scope of the teachings found in those references. The Examiner is unable determine how the references cited on the IDS are relevant or material to the patentability of the pending claims. Nevertheless, as indicated in the 4 August 2009 Office

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Action, the Examiner has considered the IDS and has provided an initialed copy of the forms PTO-1449.

Reasons for Allowance

5. The following is an examiner's statement of reasons for allowance:

Independent claims 1, 10, and 12 were previously rejected under 35 U.S.C. § 103(a) as being unpatentable over Coker in view of Rosenberg, further in view of Teramoto. In response to that rejection, Applicants argue primarily that:

Rosenberg asserts that the multiple processors in a SIMD architecture will halt when a fault occurs in one of the processors. The Office Action appears to consider this as reading on "simultaneously halting both the *real* microcontroller and the *virtual* microcontroller", as recited in claim 1. However, Rosenberg does not disclose or even suggest that one of the processors being halted can be a *real* microcontroller while another one of the processors is a *virtual* microcontroller.

[...]

Rosenberg describes the simultaneous halting of *identical* processors. In contrast, claim 1 recites simultaneous halting of a *real* microcontroller and a *virtual* microcontroller. The simultaneous halting of the SIMD processors in Rosenberg cannot be properly considered as reading on "simultaneously halting both the *real* microcontroller and the *virtual* microcontroller" because one of ordinary skill in the art would not consider *identical processors* as reading on a *real microprocessor* and a *virtual microprocessor*. The previous Office Actions have not addressed this distinction between the real microprocessor and the virtual microprocessor, and therefore have not established a prima facie case of obviousness. Similarly, with regard to claim 12, simultaneously halting the *identical* processors of Rosenberg would not be considered as reading on simultaneously halting a *tested device* and a *virtual* processor.

The Examiner has fully considered this argument and has found it persuasive. Accordingly, the previous rejection of claims 1-2, 4-10, 12, 14-20, and 23 under 35 U.S.C. § 103(a) as being unpatentable over Coker in view of Rosenberg, further in view of Teramoto are withdrawn.

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For the same rationale, the previous rejection of claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Coker in view of Rosenberg, further in view of Teramoto, and further in view of Dahl, and further in view of Bauer, is withdrawn.

For the same rationale, the previous rejection of claim 22 under 35 U.S.C. § 103(a) as being unpatentable over Coker in view of Rosenberg, further in view of Teramoto, and further in view of Matyas, is withdrawn.

6. Therefore, the claimed invention is distinguished over the closest prior art of record. The allowable subject matter is found in the independent claims:

(claim 1) *in the real microcontroller, executing a set of boot code to carry out initialization;*

in the virtual microcontroller, executing a set of timing code to enable a lock-step synchronization with the real microcontroller...

simultaneously halting both the real microcontroller and the virtual microcontroller; and restarting the real microcontroller and the virtual microcontroller to execute instructions in lock-stepped synchronization.

(claim 10) *in the real microcontroller, executing a set of boot code to carry out initialization;*

in the virtual microcontroller, executing a set of timing code to enable a lock-step synchronization with the real microcontroller...

simultaneously halting both the real microcontroller and the virtual microcontroller by branching to assembly instruction line 0; ...and

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removing the break at the assembly line 0 after the copying the register contents and the copying the memory contents.

*(claim 12) in the tested device, executing a set of boot code to carry out initialization;
in the virtual processor, executing a set of timing code to enable a lock-step
synchronization with the tested device...*

*simultaneously halting both the tested device and the virtual processor; and
restarting the tested device and the virtual microprocessor to execute instructions in lock-
stepped synchronization.*

in combination with the other recited elements of the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Proctor whose telephone number is (571) 272-3713. The examiner can normally be reached on 8:30 am-4:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached at (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jason Proctor/
Primary Examiner, Art Unit 2123

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